REMARKS

Claims 1-24 are all the claims pending in the application. By this Amendment, Applicant amends claim 1 to include the features of claims 2, 5, 8, 9, and 10. For conformity therewith, Applicant cancels claims 2, 5, 8, 9, and 10 and amends claims 3, 4, 6, 7, and 11. In addition, Applicant amends claims 12-19 and 21 to further clarify the invention. Claim 20 is amended to include the features of claims 22-24. Accordingly, claims 22-24 have been canceled. Claims 1, 3, 4, 6, 7, 11-21 are also amended for better conformity with the US practice. No new matter is being added.

I. Preliminary Matters

Applicant thanks the Examiner for acknowledging Applicant's claim to foreign priority and for indicating receipt of the certified copy of the Priority Document. Also, Applicant thanks the Examiner for indicating acceptance of the drawings filed on March 31, 2004.

II. Summary of the Office Action

Claim 18 is objected to because of informalities. Claims 1-24 stand rejected. Specifically, claims 20-22 are rejected under 35 U.S.C. § 112, second paragraph, claims 1-20 and 22-24 are rejected under 35 U.S.C. § 102(b) and claims 5-11, 14-19, 21, 23, and 24 are rejected under 35 U.S.C. § 103(a).

III. Claim Objections

The Examiner objected to claim 18 because of a minor informality. Applicant has revised the claim, and respectfully submits that the claims as now presented no longer include

the potential informality mentioned by the Examiner. Applicant therefore respectfully requests the Examiner to withdraw the objections to the claim.

IV. Claim Rejections under 35 U.S.C. § 112

The Examiner rejected claim 20-22 under 35 U.S.C. § 112, second paragraph. Applicant respectfully thanks the Examiner for pointing out, with particularity, the aspects of the claims thought to be indefinite. Applicant respectfully requests the Examiner to withdraw this rejection in view of the self-explanatory claim amendments being made herein to claims 20 and 21. Claim 22 has been canceled; therefore, this rejection is rendered moot with respect to claim 22.

V. Claim Rejections under 35 U.S.C. §102(b)

Claims 1-20 and 22-24 are rejected under 35 U.S.C. § 102(b). Applicant respectfully travereses these grounds of rejections in view of the following comments.

Claims 2, 5, 8, 9, 10, and 22-24 have been canceled. Therefore, this rejection is rendered moot with respect to these claims.

A. Claims 1, 3, 4, 12, 13, and 20 are not anticipated by Iijima

Claims 1-4, 12-13, 20, and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No.: 4,040,937 to Iijima et al. (hereinafter "Iijima").

Independent claim 1 requires a compound material comprising:

> a first high heat conductive layer, adapted to conduct thermal capacities from a correspondent electronic device;
>
> a first electromagnetic interference (EMI) shielding layer, shielding electromagnetic interferences from outside of the correspondent electronic device, which is superposed to the first high heat conductive layer;

> a second high heat conductive layer, adapted to conduct thermal capacities from a correspondent electronic device, which is superposed to the first EMI layer opposite to the first high heat conductive layer; and
>
> a second EMI shielding layer, shielding electromagnetic interferences from outside of the correspondent electronic device, which is superposed to the second high heat conductive layer opposite to the first EMI shielding layer;
>
> wherein the first and second EMI shielding layers both comprise a heat conductive sub-layer and a plurality of EMI shielding blocks therein, the EMI blocks of the first and second EMI shielding layers being separately and alternately arranged in the corresponding heat conductive sub-layers and staggered from the corresponding EMI shielding blocks in a overlapped or vertical direction thereof.

That is, the compound material set forth in claim 1 utilizes the overlapped high heat conductive layers and EMI shielding layers to efficiently conduct thermal capacities from a correspondent electronic device and to shield EMI from outside thereof. As mentioned above, a plurality of high heat conductive sub-layers (1, 3, 5) and EMI shielding layers (2, 4) are superposed alternately together. Each EMI shielding layer has a high heat conductive sub-layer in which according EMI shielding material is filled separately and alternately, which makes each EMI shielding layer look tessellated.

Iijima, on the other hand, discloses a mother blank for producing starting sheets used in electrolytic non-ferrous metal production. In Iijima, the mother blank has a laminar electrolytic deposition member comprising a planar metal member as the central layer and electrically conductive polybutene resin layers constituting two surface layers (1) of the electrolytic deposition member (2), and a frame-like insulating member (3) made of an electrically

nonconductive polybutene resin and attached integrally to the periphery of the laminar electrolytic deposition member.

That is, the mother blank of Iijima only utilizes the combination of the electrically conductive polybutene resin layers and the electrically nonconductive polybutene resin layer for increasing the adhesive strength and the resistivity against stress-cracking and eliminating the possibility of the deposited layer that is being peeled off the polybutene. The electrically conductive polybutene resin layers interposed with a sheet of metal wire net 2 as disclosed by Iijima does not include the high heat conductive sub-layer (23, 43) set forth in claim 1. In other words, Iijima does not disclose the EMI shielding layer having a heat conductive sub-layer (23, 43) and a plurality of EMI shielding blocks (22, 42), which are separately and alternately arranged therein. Accordingly, Iijima does not disclose or suggest the unique features of claim 1.

Accordingly, claim 1 patentably distinguishes (and is patentable over) Iijima. Reconsideration of claim 1 is therefore respectfully requested. Claims 3 and 4 are patentable at least by virtue of their dependency on claim 1.

Independent claim 12 recites features similar to, although not necessarily coextensive with, the features argued above with respect to claim 1. Therefore, arguments presented with respect to claim 1 are respectfully submitted to apply with equal force here. For at least substantially analogous exemplary reasons, therefore, independent claim 12 is patentably distinguishable from Iijima. That is, Iijima fails to disclose the EMI shielding layer having a heat conductive sub-layer (23 or 43) and a plurality of EMI shielding blocks (22 or 42), which

are separately and alternately arranged therein. Accordingly, Applicant respectfully requests the Examiner to withdraw this rejection of claim 12 and its dependent claims 13 and 20.

B. Claims 1, 3, 4, 6, 7, and 11-20 are not anticipated by Yeh, as evidenced by Bayer

Claims 1-20 and 22-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,632,942 to Yeh et al. (hereinafter "Yeh") in view of (to show inherency) U.S. Patent No. 4,598,017 to Bayer et al. (hereinafter "Bayer"). Applicant respectfully travereses these grounds of rejection in view of the following comments.

Independent claim 1, among a number of unique features requires a design of alternately overlapped high heat conductive layers (1, 3, 5) and EMI shielding layers (2, 4). Each EMI shielding layer (2, 4) has a high heat conductive sub-layer (23, 43) in which an EMI shielding material is filled separately and alternately. Each high heat conductive sub-layer is formed with tessellated slots or holes therein for making EMI shielding blocks (22, 42), which are arranged separately and alternately by filling the EMI shielding material. The positions of the EMI shielding blocks (22, 42) in different EMI shielding layers (2, 4) are staggered relative to the positions of the EMI shielding blocks (22, 42) in the adjacent EMI shielding layers (2, 4) in the overlapping or vertical direction. Therefore, the staggered heat conductive portions of the high heat conductive sub-layers (23, 43) of the EMI shielding layers (2, 4) anti the overlapped heat conductive layers (1, 3, 5) can form a heat conducting track which is staggered, consecutive and sinuous, and which guarantee high thermal conductivity and high resistivity of EMI shielding of the compound material set forth in claim 1.

Yeh discloses "a method for preparing multilayer ceramic/glass substrates with electromagnetic shielding" (*see* Abstract). Yeh discloses a plurality of ceramic/glass precursory matrixes (1) that are first prepared from an inorganic slurry containing ceramic/glass powders and other additives. At least one of the ceramic/glass precursory matrixes (1) is coated with a metallic layer (2) before densification (typically by sintering). An un-coated ceramic/glass precursory matrix (1) is then stacked on top of the metal-coated matrix (2) in a head-to-tail fashion, *i.e.* the metal layer (2) is sandwiched between the two ceramic/glass matrixes (1). The stacked precursory matrixes (1) are then laminated and sintered under pressure and/or temperature to form a densified substrate. If the final substrate contains two or more of such metal-coated matrixes (Fig. 3), each of the metal coating layer (2) can be made to have a complementary on-and-off *i.e.*, coated-and-uncoated pattern. Two adjacent metal coating layers (2) are rotated at a 90 degrees phase relative to each other and collectively, as the two adjacent metal coating layers (2) which are complementary to each other for providing complete areal coverage to shield electromagnetic interference. The off (blank or uncoated) portion (Fig. 3) in the metal coating layer (2) allows two adjacent ceramic/glass matrixes to grow therethrough and adhere to each other during the lamination and/or sintering stage.

Because the metal coating layer (2) either individually or collectively provides a complete areal coverage relative to the substrate, interference from electromagnetic wave can be effectively shielded. Furthermore, because the metal coating layer (2) is laminated and sintered with the ceramic/glass matrix, strong bonding can be established therebetween and the strength of the resultant substrate will be minimally, if any, adversely affected.

Although the metal coating layers taught by Yeh can provide a complete areal coverage to shield EMI, the multilayer ceramic/glass substrates taught by Yeh does not disclose a high thermal conductive track formed through each two metal coating layers. The staggered EMI shielding blocks (22, 42) described in claim 1 cooperate with the high heat conductive sub-layers (23, 43) for efficiently conducting thermal capacities from one high heat conductive layers (1, 3, 5) to another through the EMI shielding blocks (22, 42) therebetween and providing a complete resistivity of external EMI. Yeh's multilayer ceramic/glass substrates with the ceramic/glass matrix and the metal coating layer are essentially different from the high thermal conductive track and EMI shielding net formed by the cooperation of the high heat conductive sub-layers (23, 43) and the staggered EMI shielding blocks (22, 42) set forth in claim 1.

Bayer fails to cure the above-identified deficiency of Yeg. Bayer discloses a "composite magnetic disk with Si and SiC substrate" (*see* Title). The carrier of the magnetic disk (1) disclosed by Bayer, which consists of a polymeric material core (1b, 1c, 1d, 1e) and one or two disks (2, 3) of reaction-bonded silicon carbide, has a planarity and surface smoothness which correspond to that of the above described carrier with silicon disks (1). Owing to the extremely high specific modules of elasticity and the low density of the reaction-bonded silicon carbide used, critical numbers of revolution of the thus composed magnetic disks (1) can be reached which are higher by a factor of approximately 2 than the formerly used magnetic disks with AlMg5 disk substrates.

The composite magnetic disk as disclosed by Bayer does not disclose or suggest the high thermal conductive track and EMI shielding net formed by the cooperation of the high heat

conductive sub-layers (23, 43) and the staggered EMI shielding blocks (22, 42), as set forth in claim 1.

Moreover, one of ordinary skill in the art would never have combined Yeh and Bayer in the manner suggested by the Examiner. Considering the multilayer ceramic/glass substrates taught by Yeh in view of the composite magnetic disk taught by Bayer, the purposes and structures disclosed by Yeh are apparently different from what Bayer discloses. The multilayer ceramic/glass substrates taught by Yeh are formed by stacked ceramic/glass precursory matrixes and the metal coated layers. However, the composite magnetic disk taught by Bayer are formed by combining the polymeric material core and the disks of reation-bonded silicon carbide. It is apparent that the material of ceramic/glass adopted by Yeh is essentially different from the polymeric material adopted by Bayer. Thus, the combination of the disclosures of Yeh and Bayer is invalid and and meaningless to a person skilled in the art due to different objects thereof.

Furthermore, even if the two are somehow combined, together, the combined teachings of the references fail to disclose the high thermal conductive track and EMI shielding net formed by the cooperation of the high heat conductive sub-layers (23, 43) and the staggered EMI shielding blocks (22, 42) as set forth in claim 1.

Consequently, Yeh and Bayer (taken alone or in any concieavable combination) do not teach or suggest the unique features of claim 1. For at least these exemplary reasons, claim 1 is patentable over the combined teachings of Yeh and Bayer. Accordingly, Applicant respectfully

requests the Examiner to withdraw this rejection of claim 1 and its dependent claims 3-4, 6-7, and 11.

Independent claim 12 recites features similar to, although not necessarily coextensive with, the features argued above with respect to claim 1. Therefore, arguments presented with respect to claim 1 are respectfully submitted to apply with equal force here. For at least substantially analogous exemplary reasons, therefore, independent claim 12 is patentably distinguishable (and is patentable over) Yeh and Bayer. Claims 13-20 are patentable at least by virtue of its dependency on claim 12.

That is, Yeh or Bayer do not disclose or suggest the EMI shielding layer having a heat conductive sub-layer (23 or 43) and a plurality of EMI shielding blocks (22 or 42), which are separately and alternately arranged for forming an EMI shielding net and a heat conducting track as set forth in claim 12. Furthermore, it is apparent to one of ordinary skill in the art that the material of ceramic/glass adopted by Yeh is essentially different from the polymeric material adopted by Bayer. Thus, the combination of the disclosures of Yeh and Bayer is invalid and meaningless to a person skilled in the art due to different objects thereof.

VI. Claim Rejections under 35 U.S.C. § 103(a)

Claims 5-11, 14-19, 21, 23, and 24 are rejected under 35 U.S.C. § 103(a). Applicant respectfully traverses these rejections in view of the following comments.

Claims 5, 8, 9, 10, 23, and 24 have been canceled. Therefore, this rejection is rendered moot with respect to these claims.

A. Claims 6, 7, 11, and 14-19 are not obvious in view of Iijima

Claims 6, 7, 11, and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima.

MPEP § 2143 provides that a prima facie case of obviousness is established only if the Examiner shows that (1) there is some teaching, suggestion, or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference; (2) there is a reasonable expectation of success; and (3) the prior art teaches or suggests all of the claim elements.

Claims 6, 7 and 11 depend on claim 1. Independent claim 1, among a number of unique features requires a design of staggered heat conductive portions and EMI shielding blocks (22, 42) of the high heat conductive sub-layers (23, 43) of the EMI shielding layers (2, 4) and the overlapped heat conductive layers (1, 3, 5). The staggered heat conductive portions and EMI shielding blocks (22, 42) form a heat conducting track which is staggered, consecutive and sinuous, which can guarantee the high thermal conductivity the high resistivity of EMI shielding of the compound material.

As noted by the Examiner on page 6 of the Off ice Action, "Iijima does disclose that the shape and the arrangement of the holes may be selected arbitrarily. Iijima also discloses that the holes are present so that the resin on both sides of the EMI shielding layer can be united to increase adhersion strength." Iijima, however, does not disclose or suggest a complete high thermal conductive track through an EMI shielding layer between two adjacent high heat conducting layers. Iijima also does not disclose or suggest that at least two adjacent EMI

shielding layers with staggered heat conductive portions and EMI shielding blocks (22, 42) are formed a high heat conducting track and a completely EMI shielding net.

MPEP §2143.01 further requieres that "if proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." Because Iijima does not teach or suggest the unique elements set forth in claim 1, claim 1 is patentable over Iijima. Claims 6, 7, and 11 are patentable at least by virtue of their dependency on claim 1.

Claims 14-19 depend on claim 12. Applicant has already demonstrated that Iijima does not anticipate or render obvious the unique features of claim 12. Accordingly, claims 14-19 are patentable at least by virtue of their dependency on claim 12.

B. Claim 21 is not obvious in view of Iijima and Hashimoto

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of U.S. Patent No.: 6,720,082 to Hashimoto et al. (hereinafter "Hashimoto"). Applicant respectfully traverses this rejection in view of the following comments.

Claim 21 depends on claim 12. Applicant has already demonstrated that Iijima fails to disclose or suggest the unique features of claim 12. Hashimoto fails to cure the deficient teachings of Iijima.

Hashimoto discloses a "glass improved in impact resistance." The glass improved in impact resistance comprises one glass plate (1, 41, 51, 71), an organic resin layer (2, 42, 52, 72) containing ethylene-vinyl acetate copolymer provided thereon, and a film (3, 43) comprising an

organic polymer provided on the layer (2, 42, 52, 72) , wherein the film (3, 43) has a hard coat layer thereon which has been formed from ultraviolet curing resin. The organic resin layer (2, 42, 52, 72) may contain conductive material dispersed therein for giving electromagnetic interference sealing property to the glass.

The electrically conductive polybutene resin layer of the mother blank taught by Iijima is used to eliminate the possibility of the deposited layer being peeled off the polybutene while the transportation from the electrolytic vessel to the peeling process. The organic resin layer taught by Hashimoto, which is contained conductive material therein is employed as the rear glass, a door glass and an inserted glass of an automobile for giving an EMI sealing property. It is obvious that the objects of electrically conductive polybutene resin layer of the mother blank taught by Iijima are significantly different from the organic resin layer taught by Hashimoto. Accordingly, the combination of Iijima and Hasimoto is invalid and meaningless to the one of ordinary skill in the art.

Moreover, even if somehow combined Iijima and Hashimoto fails to disclose the high thermal conductive track and EMI shielding net formed by the cooperation of the high heat conductive sub-layers (23, 43) and the staggered EMI shielding blocks (22, 42) set forth in clam 12. Accordingly, cclaim 21 is patentable at least by virtue of its depednency on claim 12.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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